

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

Midas Green Technologies, LLC,

Plaintiff,

- vs. -

Green Revolution Cooling, Inc.

Defendant

Civil Action No. 6:24-cv-00166-ADA

Jury Trial Demanded

**MIDAS GREEN TECHNOLOGIES, LLC'S
RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Green Revolution Cooling, Inc. (“GRC”) boldly mischaracterizes the ‘457 Patent and the events surrounding its development. Further, the assertion that Midas “learned about, purchased, and copied” GRC’s technology is baseless and unsupported by any factual evidence. Midas independently developed its immersion cooling technology, as evidenced by the detailed descriptions and innovations outlined in its provisional applications filed in December 2012 and June 2013. These applications demonstrate Midas’s efforts to address specific technical challenges with immersion cooling, establishing an independent and inventive contribution to the field.

As to the claim terms, Midas and GRC mostly agree that the ‘457 Patent claim terms should be given their plain and ordinary meaning. For the term, “plenum”, Midas and GRC agree that a more definitive construction is needed, but also agree on its construction. The parties agree that the term “plenum” means “a structure for dispensing liquid.” As a result of these collaborative efforts, only three terms require the Court’s attention for construction.

II. DISPUTED TERMS AND PHRASES

A. The First Disputed Phrase Is In Independent Claims 1 And 6:

a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir.

Midas believes this term is best understood by its plain and ordinary meaning. GRC argues that Midas has read the phrase “as it flows over the weir” from the claim, which is not true. Midas has never proposed any construction or use that reads out that portion and has consistently applied the plain meaning to the full limitation. GRC proposes the following interpretation, which completely removes the structure that defines the fluid recovery reservoir, substitutes an ambiguous functional phrase, and adds limitations to the

claim that were not intended nor required. It also adds an unsupported and unhelpful timing aspect to the claim (“as soon as”):

the dielectric fluid is received by the recovery reservoir as soon as the fluid flows over the weir

This Court should reject the GRC proposal and apply plain meaning to the limitation as it is set out in claims 1 and 6.

B. The Second Disputed Phrase Is In Independent Claims 1 And 6:

a weir, integrated horizontally into the long wall of the tank

Midas believes the plain meaning of the phrase “integrated horizontally” is clear and concise with no need for extraneous words. But once again, GRC wrongly accuses Midas of reading this phrase out of the claim. Midas has never proposed any construction or application that reads out that portion and has consistently applied the plain meaning of the full limitation. GRC proposes constructing the easily understood two-word phrase “integrated horizontally” with the following eleven-word, awkward and confusing language, which even contains a parenthetical:

a weir having a horizontal (as opposed to vertical) orientation that is integrated into the long wall of the tank

This proposal would not assist a POSITA or a jury in understanding the claim. As a consequence, the Court should reject the GRC proposal and apply plain and ordinary meaning.

C. The Third Disputed Term Is In Independent Claims 1 And 6:

“weir” as described as “an overflow structure or barrier that a liquid flows over”

Midas proposes a construction of “an overflow structure or barrier that a liquid flows over”. This construction is fully supported by claims 1 and 6, the specification, the drawings, and by a POSITA. However, GRC argues that Midas should use a construction that it stipulated in a prior case. But that stipulated construction in a prior matter is not binding on Midas in this case,

as the prior construction was never litigated to finality. GRC cites no legal doctrine and no case law that would bind Midas to the prior construction. As Midas proposes a fully supported, clear, and consistent construction of “*weir*”, the Court should adopt the Midas construction.

Finally, GRC argues that claim 2 is indefinite as the phrase, “*highly integrated*” is not understandable. However, as fully set out later in this brief, the meaning is fully disclosed, shown, and described in the specification, and a POSITA would easily understand what structure is defined as “*highly integrated*”. As a result, claim 2 is not indefinite.

III. BACKGROUND

A. Overview of Immersion Cooling

Electronic equipment, such as computer systems, generate substantial heat during operation that can harm sensitive electronics or require operating the equipment at reduced capacity to reduce the amount of heat generated. As a consequence, heat management is an important aspect of many installations of computers, particularly in large data warehouses and server farms. Traditionally, the temperature of operating electrical appliances, e.g. computers and their components, has been maintained by circulating cool air through and around the electrical appliances. In this situation, waste energy, typically referred to as heat, from the electrical appliance is transferred from the electrical appliance to the air through convection heat transfer.

Managing and moving this heat can be quite complex and relies on the application of Newton’s Laws. As specified in Newton’s Law of Cooling, the heat transfer rate from an electrical appliance is dependent on the surface area of contact between the appliance and the fluid, the difference between the temperature of the appliance and the bulk or average temperature of the fluid, and the convection heat transfer coefficient. As the power of electrical appliances has increased, the amount of cooling required to prevent

overheating of the electrical appliances has increased. As indicated by Newton's Law of Cooling, the heat removed from an electrical appliance can be increased by increasing the surface area of the heat transfer and reducing the temperature of the cooling fluid, thereby increasing the temperature difference between the electrical appliance and the cooling fluid. However, both of these options have negative effects on system and operating costs. The remaining option is to increase the convection heat transfer coefficient.

One means of greatly increasing convection heat transfer is to use an external device, such as a pump or fan, to increase the flow rate of a coolant to be greater than what is possible as a result of coolant density change (natural convection). Increasing the coolant flow through the use of a pump or fan is known as forced convection and refers to the enhancement of heat transfer as a result of fluid motion. (Convective Heat and Mass Transfer, W.M. Kays and M.E. Crawford, (3rd ed., 1993).)

Using a more efficient fluid to cool the electrical appliances is another effective way to increase the convection heat transfer available to maintain electrical appliance operating temperatures. Air has traditionally been used as a fluid for cooling electrical appliances due to its ease of use and is non-electrically conductive. Unfortunately, air has a low thermal capacity (ability to carry energy) and low density, and correspondingly, a low convective heat transfer coefficient. Replacing air with a fluid that has a high thermal capacity, high density, and is non-electrically conductive, referred to as a dielectric fluid, and designing a system around such a fluid, greatly increases the ability of a system to maintain the optimal operating temperature of electrical appliances.

B. Overview of the '457 Patent

The patent at issue in this lawsuit is U.S. Patent Number 10,405,457 (“the ‘457 Patent”) issued September 3, 2019, to Midas Green Technologies, LLC. The title of the ‘457 Patent is “Appliance Immersion Cooling System.” At a high level, the ‘457 Patent is directed to a system for improved cooling of electronic devices, such as computer servers, crypto miners, and other computing equipment. More particularly, the system of the ‘457 Patent immerses electronic appliances in a tank of dielectric liquid. Dielectric fluid is non-electrically conductive, so is safe for electronics, and has desirable characteristics for more efficiently extracting heat from electronic devices as compared to air cooling. The system of the ‘457 Patent circulates the dielectric fluid through the tank, and in particular dispenses the fluid into the tank from the plenum adjacent to the bottom of the tank, which uniformly directs the fluid upwardly through the electronic appliances. The heated fluid flows out of the appliance tank, over a weir, and the fluid is received into a recovery reservoir. The hot dielectric fluid is then circulated through a secondary circulation facility that extracts heat from the dielectric fluid and dissipates the heat to the environment. A control system coordinates the circulations as a function of the temperature of the dielectric fluid. The ‘457 Patent ensures a uniform distribution of cold dielectric coolant and carefully controls the flow of the cold versus hot coolant. By having a plenum at the bottom of the cooling tank and a weir at the top, the ‘457 Patent ensures that there is no mixing of hot and cold coolant, therefore maximizing the cooling capacity of the immersion cooling system.

The Asserted Claims involving infringement of the ‘457 Patent are independent Claims 1 and 6, and dependent Claims 2 and 3. Claim 1 is duplicated below, disputed terms are bolded and underlined. The same terms are at issue in claim 6.

Claim 1: *An appliance immersion cooling system comprising:
a tank adapted to immerse in a dielectric fluid a plurality of electrical appliances,
each in a respective appliance slot distributed vertically along, and extending transverse
to, a long wall of the tank, the tank comprising:*

a weir, integrated horizontally into the long wall of the tank
adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot; and;

a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir;

a primary circulation facility adapted to circulate the dielectric fluid through the tank, comprising:

a plenum, positioned adjacent the bottom of the tank, adapted to dispense the dielectric fluid substantially uniformly upwardly through each appliance slot;

a secondary fluid circulation facility adapted to extract heat from the dielectric fluid circulating in the primary circulation facility, and to dissipate to the environment the heat so extracted; and

a control facility adapted to coordinate the operation of the primary and secondary fluid circulation facilities as a function of the temperature of the dielectric fluid in the tank.

IV. LEGAL STANDARD

A. Claim Construction

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” (*Phillips v. AWH Corporation*, 415 F.3d 1303 at 1312 (Fed. Cir. 2005) (en banc) (citations omitted).) “Claim construction is a matter of law for the court.” (*Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc).) “Terms are not to be construed in the abstract, but rather, in the context in which they were presented and used by the patentee, as would have been understood by a skilled artisan in view of the intrinsic record.” (*Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1094 (Fed. Cir. 2013).) (“[A] term’s ordinary meaning must be considered in the context of all the intrinsic evidence, including the claims, specification, and prosecution history.”). The patent specification is “the single best guide to the meaning of a disputed term.” (*Phillips supra*, 415 F.3d at p. 1315.)

Claim terms are generally given their ordinary and customary meaning, which is “the meaning that the term would have to a person of ordinary skill in the art in question

at the time of the invention, i.e., as of the effective filing date of the patent application.” (*Phillips*, supra 415 F.3d at p. 1313.) But “a sound claim construction need not always purge every shred of ambiguity.” *Acumed LLC v. Stryker Corporation*, 483 F.3d 800, 806 (Fed. Cir. 2007). Indeed, “after the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.” (*PPG Industries v. Guardian Industries*, 156 F.3d 1351, 1355 (Fed. Cir. 1998).)

A purpose of claim construction is to simplify technical terminology in a claim for the jury by substituting more readily understandable wording. (*Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1360 (Fed. Cir. 2008).) However, not all claim terms require construction. Courts are not required to construe claim terms with well-understood meanings, lest they be “inundated with requests to parse the meaning of every word in the asserted claims.” (*Micro International Limited, v. Beyond Innovation Technology Company*, 521 F.3d 1351, 1360 (Fed. Cir. 2008).) If the proper interpretation of a term may be readily apparent to a lay person, then the court should simply apply its widely accepted meaning. (*Phillips*, 415 F.3d at p. 1314.) Cases refusing to construe plainly understood terms are legion. As will be explained further below with reference to the specific terms, there is no compelling reason to construe the plainly understood terms of the Patents-in-Suit.

B. Indefiniteness

“[I]ndefiniteness is a question of law and in effect part of claim construction.” (*ePlus, Inc. v. Lawson Software, Inc.* 700 F.3d 509, 517 (Fed. Cir. 2012); *Eidos Display, LLC v. AU Optronics*

Corp., 779 F.3d 1360, 1364-65 (Fed. Cir. 2015).) (“The indefiniteness inquiry here is intertwined with claim construction . . .”). Pre-AIA 35 U.S.C. § 112, ¶ 2[1] requires that a patent’s specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” *Id.* In other words, a claim must inform a person of skill in the art as to what is within its scope and what is excluded. (*Exmark Manufacturing Company, Inc. v. Briggs & Stratton Power Prods. Group, LLC*, 879 F.3d 1332, 1346 (Fed. Cir. 2018).) Because all patents are presumed valid, invalidity for indefiniteness must be proven by clear and convincing evidence.

The definiteness requirement thus contains two requirements: “first, [the claim] must set forth what ‘the applicant regards as his invention,’ and second, it must do so with sufficient particularity and distinctness, i.e., the claim must be sufficiently ‘definite.’” (*Allen Engineering Corporation v. Bartell Industries, Inc.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002).) A claim is invalid under the first requirement “[w]here it would be apparent to one of skill in the art, based on the specification, that the invention set forth in a claim is not what the patentee regarded as his invention.” (*Id.* at p. 1349.) A claim is indefinite under the second requirement if, when “read in light of the specification” and “prosecution history,” it “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” (*Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).) Absolute precision is not required; however, a claim must provide objective boundaries with sufficient clarity “such that a person of ordinary skill in the art could determine whether or not an accused product or method infringes the claim.” (*Niazi Licensing Corporation v. St. Jude Medical S.C., Inc.*, 30 F.4th 1339, 1346-1347 (Fed. Cir. 2022)) (citing *Nautilus*, *supra*, 572 U.S. at p. 910); *Guangdong Alison Hi-Tech Company v. International Trade Commission*, 936 F.3d 1353, 1359 (Fed. Cir. 2019).)

“Reasonable certainty” must be evaluated in view of the claims as a whole, not “particular claim terms.” (*Cox Communications, Inc. v. Sprint Communications Co. LP*, 838 F.3d 1224, 1231 (Fed. Cir. 2016)). “Reasonable certainty [also] does not require absolute or mathematical prevision.” (*BASF Corporation v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017)) (quoting *Nautilus*, *supra* 783 F.3d at p. 1381).

A claim is not indefinite because it may be broad. “Merely claiming broadly does not render a claim insolubly ambiguous, nor does it prevent the public from understanding the scope.” (*Ultimax Cement Manufacturing Corporation v. CTS Cement Manufacturing Corporation*, 587 F.3d 1339, 1352 (Fed. Cir. 2009).) Indeed, “[b]readth is not indefiniteness.” (*BASF Corp.*, *supra*, 875 F.3d at p. 1367); (quoting *SmithKline Beecham Corporation v. Apotex Corporation*, 403 F.3d 1331, 1341 (Fed. Cir. 2005).)

V. ARGUMENT

A. Agreed Terms

The Parties have agreed that the term “plenum” means “a structure for dispensing liquid.” Further, except for the disputed terms identified below, the Parties agree that all other claim terms should be given their plain and ordinary meaning.

B. Disputed Terms

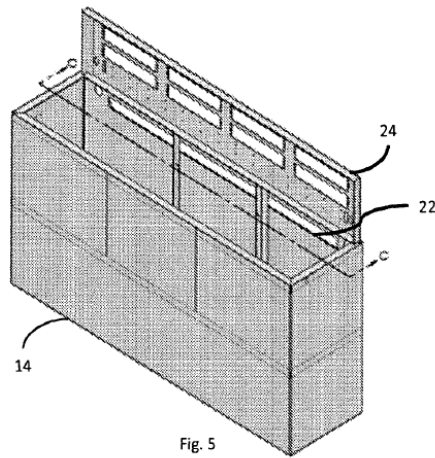
1. Weir

TERM	MIDAS PROPOSAL	GRC PROPOSAL
“weir” (claims 1 & 6)	“an overflow structure or barrier <u>that a liquid flows over</u> ”	“an overflow structure or barrier <u>that determines the level of liquid</u> ”

A. Midas Proposes a Straight-Forward and Well Supported Construction

Midas proposes a simple construction for “weir” that is consistent and fully supported by claims 1 and 6, by the specification, and by what is understood by a POSITA. For example, the ‘457 Patent expressly states (Fig. 5 also duplicated):”

One further shared component is the dielectric fluid recovery facility 40 (FIG. 2) comprising a dielectric fluid recovery reservoir 42 (see, FIG. 3, FIG. 4, and FIG. 13) positioned vertically beneath the overflow lip of the weir 22 and adapted smoothly to receive the dielectric fluid as it flows over the weir 22; (4:27-32)



Further, by definition and as understood by a POSITA, a “weir is a dam over which liquids are forced to flow.” (Mark’s Standard Handbook for Mechanical Engineers, 10th ed, Avallone, Eugene A., Baumeister III, Theodore, 1996) As such, the primary function of a weir is to provide a barrier that prevents liquid from flowing when the level of the liquid is below the barrier, called the crest of the weir, and enables liquid to flow once the level of the liquid exceeds the crest. A weir is classified according to the shape of the crest, examples include, but are not limited to, rectangular, triangular, trapezoidal, parabolic, and hyperbolic weirs. The weir featured in Figures 5, 6, and 13 of the ‘457 Patent is classified as a rectangular weir because the crest, or lip, has a rectangular shape. Different embodiments of the ‘457 Patent may utilize a crest, or lip, with a different shape.

The crest of a weir does determine the minimum level of liquid required for the fluid to flow over the weir, but the weir alone does not determine the level of liquid in a system containing a weir. The forces acting on a liquid flowing over a weir include inertia, viscosity, surface tension, and gravity. (Mark’s Standard Handbook for Mechanical Engineers, 10th ed, Avallone, Eugene A., Baumeister III, Theodore, 1996) These forces and the flow rate of the liquid determine the size of

the Head, or distance between the surface of the liquid and the crest, as shown in Figure 1. In turn, the size of the Head, in combination with the forces acting on the liquid and the shape of the crest, determine the size of the Nappe (see Figure 1) which is a measure of the amount of liquid flowing over the weir.

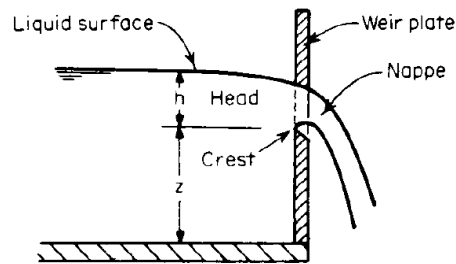


Figure 1: Notation of a Weir (Mark's Standard Handbook for Mechanical Engineers, 10th ed, Avallone, Eugene A., Baumeister III, Theodore, 1996)

As seen in the preceding paragraphs, the multiple forces that act on the liquid, the rate of flow of the liquid, and the location and shape of the crest all contribute to determining the level of liquid in a system containing a weir. Further, the level of coolant is influenced by multiple components of the primary circulation facility as described in the '457 Patent where it states “the primary circulation facility [28] (comprising redundant sub-facilities [28a] and [28b]) comprises both passive (conduits, couplers, etc.) and active (valves, pumps, sensors, etc.) components” (Col. 4, lns 5-8) and further describes “One further shared component is the dielectric fluid recovery facility [40] (FIG.2) comprising a dielectric fluid recovery reservoir [42] (see, FIG 3, FIG. 4 and FIG. 13) positioned vertically beneath the overflow lip of the weir [22]” (Col 4, lns. 27-32.) A POSITA would understand that the primary circulation facility, which includes multiple active and passive components, would have a significant effect on the level of coolant.

The construction of a weir as “an overflow structure or barrier that a liquid flows over” is a straightforward and consistent construction that is very understandable to a POSITA. Therefore,

the construction of “an overflow structure or barrier that a liquid flows over” is instructive and understandable to a POSITA and should be adopted.

B. GRC Does Not Provide any Technical Support for Their Construction

GRC’s complete argument for its construction of “weir” is that Midas used that construction in a prior case. But that stipulated construction in a prior matter is not binding on Midas in this case, as the prior construction was never litigated to finality. In stating its position in its opening brief, GRC never even raises (1) issue preclusion, (2) estoppel, (3) claim preclusion or (4) res judicata, and does not cite to a single case that Midas should be bound to the prior construction. The reason, of course, is that none of these four legal doctrines apply to the facts of the Midas cases. Not only does GRC agree that none of these four doctrines apply, but they have fully waived any right to assert them in this claim construction process.

The only argument made by GRC is that the Midas proposal is “redundant with other aspects of the claim”. GRC’s position is certainly an interesting spin on claim construction, to say the least. The Midas construction is not “redundant” but amplifies the consistency in the claim read as a whole. In particular, claims 1 and 6 have the following claim limitation:

a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir

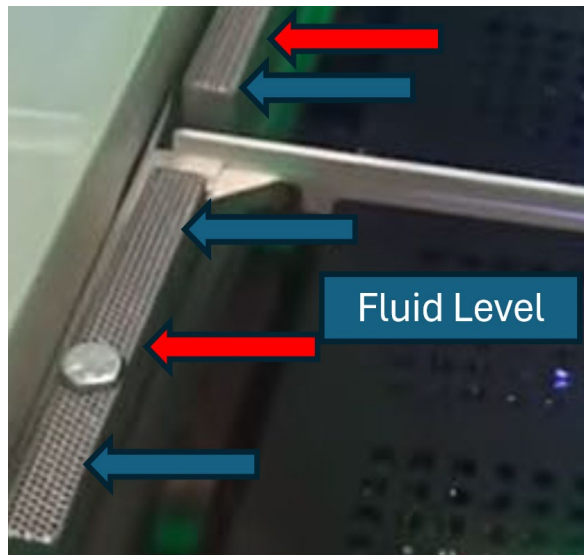
This claim limitation is defining the structure for the “fluid recovery reservoir”, and in defining the reservoir’s structure sets out that the reservoir structure is “adapted to receive the dielectric fluid as it flows over the weir.” Midas proposes the construction of a weir that makes abundantly clear that the purpose and structure of the “weir” is to permit fluid to overflow it. This does not add “redundancy,” but simply assures that the construction and application of the “weir” limitation are consistent with the structures defined in the “recovery reservoir” limitation.

2. Integrated Horizontally Into the Long Wall of the Tank

TERM	MIDAS PROPOSAL	GRC PROPOSAL
“a weir, <u>integrated horizontally</u> into the long wall of the tank” (claims 1 & 6)	Plain Meaning	“a weir <u>having a horizontal (as opposed to vertical) orientation that is integrated</u> into the long wall of the tank”

What GRC proposes is to take the easily understood phrase “integrated horizontally” and substitute it with the confusing and awkward phrase “having a horizontal (as opposed to vertical) orientation that is integrated. The table above highlights the confusion. GRC oddly asserts that Midas has read out the “integrated horizontally” from the claim language. It has not. Midas has always constructed and used the full plain language of this limitation, which includes “integrated horizontally.”

GRC is attempting to set up a non-infringement position for its accused product shown below but shrouds this attempt as a claim construction issue. The image below is an infringing GRC immersion tank that circulates dielectric fluid through computers. The dielectric fluid is pumped into the bottom of the tank, and flows upwardly through the computers, which removes heat from the computers and warms the fluid. The fluid rises to the top of the tank and then flows into the gray boxes. The fluid falls by gravity to the bottom of the gray boxes, i.e. collects in the recovery reservoir. A pump (not shown) circulates the fluid through a heat exchanger (also not shown) for cooling and re-introduction into the bottom of the immersion tank. A horizontally oriented, highly porous, perforated metal mesh covers the top of each gray box. As illustrated below, at least three gray boxes (see red arrows) are bolted or otherwise integrated into the long wall of the immersion tank. The tops of all the boxes are flush with the surface of the dielectric fluid, confirming a horizontal orientation. As can be better seen in an enlarged view of the



infringing GRC immersion tank, each of the gray boxes is covered by a highly porous perforated metal mesh with rows of staggered offset holes. The uniform level of the coolant on all three sides of the boxes shows that the porous perforated metal coverings are oriented horizontally.

As can best be seen in the enlarged view of the infringing GRC immersion tank shown above, all the holes of the perforated metal mesh atop the gray boxes are on the same horizontal plane, and so are horizontally aligned. Further, the gray boxes are integrated into the long wall of the immersion tank and are positioned such that the top of every gray box is in the same horizontal plane, as confirmed by the coolant level, and so are integrated horizontally into the long wall of the tank. The gray boxes, including their location, alignment, orientation, and porous mesh top,

meet the definition of a weir. They contain a crest, or lip, that determines the minimum level of the dielectric coolant required to flow over the weir, they possess a Head that is determined by the forces acting on the dielectric coolant and the flow rate of the dielectric coolant, and the flow over the weir would form a Nappe. (See Figure 1 above for weir notation) Based on the shape of the top lip, or crest, the gray boxes are considered a rectangular weir.

It is clear from these images and all proposed constructions of a weir that the gray boxes are a weir, integrated horizontally into the long wall of the tank adjacent all appliance slots, having an overflow lip adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot. Midas has never taken the position that “integrated horizontally” can be read out. As defined in the prior “weir” section, a “weir is a dam over which liquids are forced to flow.” A POSITA would understand that a weir is a structure that utilizes gravity to force the liquid to flow over the crest or lip. As such, the horizontal orientation of the crest or lip, no matter what the shape of the lip, e.g. rectangular, triangular notch, trapezoidal notch, etc. is the key to achieving the goal of the claim which is stated to be to “facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot.” This has always been Midas’s position.

Adding the phrase “**having a horizontal (as opposed to vertical) orientation**” to the claim language only adds confusion and uncertainty. A POSITA would already understand that to orient a weir with even a slight vertical orientation, e.g. a weir with a lip that slopes, will result in a liquid flow rate through appliance slots that varies with location along the long wall of the tank. This is contrary to the goal of the claim to “facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot.”

The body of the ‘457 Patent is very clear about the horizontal orientation of the weir. The

abstract clearly states “A weir, integrated horizontally into a long wall of the tank, is adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each appliance slot.” A POSITA would understand that only a horizontally oriented weir would result in substantially uniform recovery of the dielectric coolant. Further, the Detailed Description of the Invention clearly describes the horizontal orientation of the weir, “a weir 22 (best seen in isolation in FIG. 5 and FIG. 6), integrated horizontally into one long wall of the tank 14 adjacent all appliance slots 18, and adapted to facilitate substantially uniform recovery of the dielectric fluid flowing through each of the appliance slots 18;” Col. 3, ln 52 - 56. Finally, Figures 5 and 6 of the ‘457 label the weir (22) and clearly show the horizontal orientation. Figure 1 shows an isometric view of the Tank Facility (12) and shows the weir with its horizontal orientation. A POSITA would use this ample information to conclude that a horizontal orientation of the weir is required to achieve the goal of substantially uniform recovery of the dielectric fluid flowing through each of the appliance slots. To add “(As opposed to vertical)” to the claim language, a phrase that does not exist anywhere in the ‘457 patent or the associated provisional documents, would add confusion and not clarity to the claim.

3. Dielectric Fluid Recovery

TERM (claims 1 & 6)	MIDAS PROPOSAL	GRC PROPOSAL
<i>“a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir”</i>	Plain meaning	<i>“the dielectric fluid is received by the recovery reservoir as soon as the fluid flows over the weir”</i>

The position that GRC takes regarding this limitation is absurd, or at least confusing and not understandable, and adds limitations to the claim that were not intended nor required.

According to the table on page 12 of its opening brief, GRC’s proposal completely

eliminates any defining structure for the fluid recovery reservoir, and replaces it with a general statement of function. Further, without support, GRC is trying to add a temporal aspect to the claim: “as soon as”. This addition is not only incorrect (discussed below), but there is no support anywhere in the specification for such a timing constraint. GRC also repeatedly states that Midas has removed “as it flows over the weir” from the claim. This is wrong. In its exchange of terms for construction, Midas proposed to construct “plenum” and “weir” and all other terms were to be plain and ordinary meaning. Never has Midas suggested that the phrase “as it flows over the weir” is not part of the plain meaning of this limitation.¹

The ‘457 Patent is quite clear and definitive that the location of the recovery reservoir is located below the lip, or crest, of the weir, e.g. “One further shared component is the dielectric fluid recovery facility 40 (FIG. 2) comprising a dielectric fluid recovery reservoir 42 (see, FIG. 3, FIG. 4, and FIG. 13) positioned vertically beneath the overflow lip of the weir 22 and adapted smoothly to receive the dielectric fluid as it flows over the weir 22;” (Col. 4 ln 27 - 32). A review of FIG. 2, 3, 4, and 13 of the ‘457 Patent supports the written description by showing the dielectric fluid recovery reservoir located vertically beneath the entirety of the overflow lip of weir 22. GRC’s proposed construction obliterates these structures and relationships. The concept of the dielectric fluid recovery reservoir being positioned beneath the overflow lip of the weir is also clearly disclosed in the 2012 Provisional on page 35, the reproduction of inventor notebook page 5. The top figure on the page shows a side view of a cooling tank containing “U-Shaped drain tubes” which are fluidly connected to a “sump.” A cross section sketch of the U-Shaped drain tubes is provided lower on the page. A POSITA would understand that the dielectric fluid would

¹ Further amplifying the weakness of GRC’s position, GRC first acknowledges that Midas had a typographical error in a prior document, but yet uses that acknowledged typographical error as a key basis to adopt its construction. Such conduct is baffling.

accumulate in the U-Shaped drain tubes and then move to the sump utilizing the intervening structure, i.e. the tubing shown in the sketch at the top of the page.

While the description and claims of the ‘457 Patent clearly specify that the reservoir must be located below the lip or crest of the weir, there is nothing in either the description nor the claims that preclude the use of intervening structures between the weir and reservoir. The “sump” described in the inventor's notebook, page 35 of the 2012 Provisional, is a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir. The description in the middle of page 35, i.e. “U-Tubes drain into a closed sump container for recirculation through heat exchanger” is consistent with the description in the ‘457 Patent and the claims of the patent. A POSITA would possess the knowledge of fluid dynamics to understand from the description given in the ‘457 Patent that the dielectric cooling fluid exiting the weir must be captured in a reservoir and that reservoir must be positioned vertically beneath the lip or crest of the weir. A POSITA’s knowledge of fluid dynamics would also inform them that this can be accomplished using intervening structures such as piping, fluid collection containers, troughs, etc. As such, it would be clear to a POSITA that the relationship between the recovery reservoir and the dielectric coolant, as it flows over the weir of each of the embodiments described above satisfies the description and claims of the ‘457 Patent.

Based on their knowledge of fluid dynamics, and the description given in the ‘457 Patent, the existing wording of Claims 1 and 6 of *“a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir”* is complete and clear to a POSITA. Adding the additional wording “as soon as” would be redundant to a POSITA and would be adding significant restrictions to the ‘457 Patent that are not intended nor required. The addition of “as soon as” to the claim interpretation would

prevent the use of any intervening structures and significantly change the scope of the claim. As a result, *“a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir”* should be given its plain meaning without any added words, phrases, or restrictions. Further, GRC’s proposal is void of structure, does not provide any antecedent basis for the reservoir, and is unsupported by the specification.

C. Claim 2 is Valid Under 35 USC § 112

Midas proposes that Claim 2 of the ‘457 Patent should be given its plain meaning while GRC proposes that Claim 2 is indefinite. GRC tries to argue that Claim 2 fails to inform, with reasonable certainty, those skilled in the art as to the scope of Claim 2 and in particular the term **“highly-integrated.”** This is wrong. The descriptor “highly” is very well understood in engineering. There are many engineering examples where “highly” is used to describe a material or process which is well understood. Examples of materials include highly viscous fluids, e.g. honey, molasses, highly conductive electrical material, e.g. copper, silver, and highly conductive thermal materials, e.g. diamond, aluminum. Examples of well-understood processes that utilize “highly” include a highly efficient process, a highly redundant process, and highly cost-effective processes.

A POSITA with an engineering degree and two years of design experience would understand that the components of a “highly-integrated” primary circulation facility would have physical design requirements such as inlet and outlet restrictions of a pump, heat exchanger, sensors, etc., and that these design requirements need to be honored, but no additional spacing between components is desired. This would be obvious to a POSITA when considering the goals of the ‘457 Patent including minimizing the volume of dielectric coolant due to cost (Col. 2, lns.

15-20 and Col, 2, lns. 41-46), minimizing dielectric coolant volume (Col 8 lns 47-50), the benefits of a highly integrated module (Col. 8, lns. 54-57), the benefits of component placement beyond dielectric coolant reduction (Col. 8, lns. 57-65), and the benefits of compact design (Col. 8, lns. 65 to Col. 9, lns. 1-4). A POSITA would understand the resulting need to make the circulation system as compact as possible while maintaining component performance. The claim language “The system of claim 1 wherein the tank and primary circulation facility comprise a highly-integrated module” is well defined and should be given its plain meaning.

VI. CONCLUSION

Based on the foregoing, the Court should adopt the following constructions:

- (1) The term “*weir*” is “**an overflow structure or barrier that a liquid flows over**”;
- (2) The phrase “*a weir, integrated horizontally into the long wall of the tank*” should be given its plain and ordinary meaning;
- (3) The phrase “*a dielectric fluid recovery reservoir positioned vertically beneath the overflow lip of the weir and adapted to receive the dielectric fluid as it flows over the weir*” should be given its plain and ordinary meaning; and
- (4) The phrase “*highly integrated*” is clearly understood, so claim 2 is not indefinite.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on December 16, 2024, a true and correct copy of was served via the United States District Court CM/ECF system on all parties or persons requiring notice.

By */s/ Tierra Mendiola*

Tierra Mendiola